





MedStar Research Institute

October 29, 1999

Office of Food Labeling (HFS-465)
Center for Food Safety and Applied Nutrition
Food and Drug Administration
200 C Street, S.W.
Washington, D.C. 20204

To the Food and Drug Administration:

Lipton has asked that I provide to you my views on the company's petition for a health claim on the association between vegetable oil sterol esters and reduced risk of coronary heart disease. I am familiar with the petition and with the data that support it. I am also familiar with the scientific standard that has formed the basis for approval of other health claims, such as those for soluble fiber from psyllium seed husk and whole oats.

My professional experience is in the field of nutrition as it relates to heart disease and diabetes. I am currently the President of MedStar Research Institute and my professional activities have included serving on the editorial boards of several journals including *ATVB*, *Atherosclerosis* and *Diabetes Care*. I have chaired the Nutrition Study Section for the NIH. My primary research activities have included studies of lipid lowering diets containing various fatty acids, and studies of diet modification in people with diabetes. A copy of my curriculum vitae is attached. Based on my professional experience, I am familiar with scientific standards for reviewing studies of cholesterol-reducing agents and with the views on this topic held by others in the scientific and medical community.

In my opinion, the cholesterol-reducing properties of phytosterols, particularly beta-sitosterol, are well established by studies in a wide variety of subjects. This conclusion has been thoroughly discussed in the literature (for example, Pollack and Kritchevsky, 1981) and is well accepted by the scientific and medical community. The many studies showing that lowering LDL cholesterol leads to reduced CHD support the association between vegetable oil sterols and reduced risk of CHD.

The chemistry of vegetable oil sterol esters indicates strongly that they will have a cholesterol-reducing effect similar to that of unesterified phytosterols. As Lipton's petition describes, the esterified vegetable oil sterols will be metabolized in the gut, cleaving the ester bond and releasing the phytosterols, predominantly beta-sitosterol.

Recent studies of vegetable oil sterol esters confirm that they do in fact reduce cholesterol levels when formulated into everyday foods such as vegetable oil spreads. The lowest tested level, about 1 g per day (in two servings), was associated with an LDL-cholesterol reduction of about 7%, with no significant effect on HDL-cholesterol levels (Hendriks et al., 1999). Other reported reductions were consistent or higher. In my view, these levels represent clinically meaningful cholesterol reductions.

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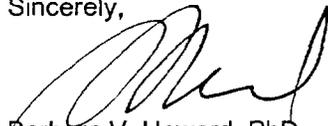
October 29, 1999
Page Two

It is my opinion that the data linking cholesterol reduction with consumption of vegetable oil sterol esters are strong and consistent. There is significant scientific agreement that cholesterol lowering by vegetable oil sterol esters can reduce the risk of CHD. Further, I believe that others in my professional field, reviewing the same data, would reach a similar conclusion.

I also support Lipton's request that vegetable oil sterol esters be exempt from certain regulatory requirements that would otherwise not permit a health claim on the labeling of foods containing this substance. In my experience, the most difficult problem in reducing CHD risk is achieving meaningful long-term dietary modification. If vegetable oil sterol esters can be formulated in convenient and palatable foods such as spreads and salad dressings, this will increase the likelihood that dietary modification will be successful. Therefore, I believe it is appropriate that Lipton's request for exemption be granted and that a health claim be permitted on the labeling of these foods.

I am confident that consumers would be assisted in making healthy food choices by a health claim about the association between vegetable oil sterol esters and reduced risk of CHD. I appreciate the FDA's consideration of my views.

Sincerely,



Barbara V. Howard, PhD
President

CURRICULUM VITAE

BARBARA VIVENTI HOWARD, PhD

PERSONAL

Date and Place of Birth: June 26, 1941, East Orange, NJ
Citizenship: USA
Marital Status: Married, (Wm. James Howard, MD); three children
Social Security Number: 139-32-3923
Office Address: Medlantic Research Institute
108 Irving Street, NW, Annex #5
Washington, DC 20010

EDUCATION

1963 BA, Biology, Bryn Mawr College, Bryn Mawr, PA
1968 PhD, Microbiology, University of Pennsylvania, Philadelphia, PA

FACULTY AND PROFESSIONAL APPOINTMENTS

1963-1967 USPHS Graduate Research Trainee, The Wistar Institute, University of Pennsylvania, Philadelphia, PA
1968-1969 Instructor, Department of Bacteriology and Immunology, School of Medicine, University of North Carolina
1969-1972 Assistant Professor, Department of Biochemistry, The George Washington University, Washington, DC
1972-1975 Assistant Professor, Department of Biochemistry, School of Dental Medicine, University of Pennsylvania, Philadelphia, PA
1975-1976 Assistant Professor, Department of Biochemistry and Physiology, Medical College of Pennsylvania, Philadelphia, PA
1976-1991 Visiting Associate Professor and Professor, Department of Biochemistry and Physiology, Medical College of Pennsylvania, Philadelphia, PA
1976-1979 Research Biochemist, Clinical Research Section, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH), Phoenix, AZ
1979-1987 Associate Chief, Clinical Diabetes and Nutrition Section, NIDDK, NIH, Phoenix, AZ
1988-1991 Director, Research Programs, Medlantic Research Institute, Washington, DC
1991-Present President, Medlantic Research Institute, Washington, DC
1992-1995 Research Professor, Dept. of Medicine, The George Washington University, Washington, DC
1993-Present Adjunct Professor, Department of Medicine, University of Maryland, School of Medicine, Baltimore, MD

1996-Present Adjunct Professor, Biochemistry Department, Howard University,
Washington, DC

FELLOWSHIPS AND AWARDS

1962 NSF Undergraduate Summer Research Award, Bryn Mawr College, Bryn
Mawr, PA
1985,1986 Visiting Professor, Department of Medicine, San Raffaele Institute, University
of Milan, Italy
1986 UpJohn Award, Clinical Diabetes & Nutrition Section, NIDDK, NIH
1992 Honorary Membership, Czechoslovak Diabetes Association
1989 Citation for Community Service, American Diabetes Association
1993 Citation for Exceptional Service, AHA National Capital Affiliate
1994 Bolton L. Corson Medal for Research in Nutrition and Atherosclerosis,
The Franklin Institute
1995 Marble Lecturer, Joslin Diabetes Center, Boston, MA
1995 Certificate of Fellowship, American College of Nutrition
1995-Present Member, Academy of Medicine of Washington, DC
1996 Special Recognition Award, Arteriosclerosis Council, AHA

ADVISORY COMMITTEES

1977-Present National Science Foundation, Ad Hoc Reviewer
1978 Ad Hoc Review Committee, NHLBI Biomaterials Contracts
1978 Ad Hoc Review Committee, NHLBI Blood-Material Interaction Grants
1979-Present Veterans Administration, Ad Hoc Reviewer
1981-1984 KROC Foundation, Ad Hoc Reviewer
1981-1985 Research and Publications Committee, American Heart Association, Arizona
Affiliate
1985-1989 Study Section, American Diabetes Association
1985 Working Committee on Diabetes and Atherosclerosis, NHLBI Atherosclerosis
and Hypertension Advisory Committee
1985-1987 Chairman, Research and Publication Committee, American Diabetes
Association, Arizona Affiliate
1985-1988 Executive Committee, Arteriosclerosis Council, American Heart Association
1987 Co-Project Officer - Diabetic Renal Disease Study, Contracts with the
Cleveland Clinic and Stanford University
1988-Present Consultant, Longitudinal Study of Diabetes and Obesity in Pima Indians,
NIDDK
1988-1991 National Institutes of Health, Nutrition Study Section
1988-Present Consultant, University of Maryland Department of Physiology Project on
Diabetes in Primates
1988 Review Panel, Nutritional and Health Impact of Sucrose Polyester, Lever
Brothers
1988 Ad Hoc Member, Research Review Committee, Juvenile Diabetes Federation

- 1988-1989 American Heart Association, Ad Hoc Committee on Clinical Lipidologists
- 1988-Present Chairman, Steering Committee, Strong Heart Study, NHLBI
- 1989 Special Study Section on Hyperglycemia and Cardiovascular Disease Risk Factor, NHLBI
- 1989-1991 DCCT Lipoprotein Advisory Panel, NIDDK
- 1989 Special Study Section, Geriatric Research and Training Centers, NIA
- 1989 NHLBI Special Study Section, Morehouse Prospective Study of CVD
- 1989 Member, Expert Panel on Technical Strategies for the Formulation of and Processing of Weight Control Foods through Fat Reduction or Substitution
- 1989-1990 Consultant, National Dairy Council Fat Budgeting Program
- 1990-Present Scientific Advisory Board, Institute San Raffaele, Rome, Italy
- 1990-Present Data Monitoring Board, VA Cooperative Study of Diabetes Mellitus
- 1990-1993 Executive Committee and Newsletter Editor, Arteriosclerosis Council, AHA
- 1991-Present National Institutes of Health Reviewers Reserve (NRR)
- 1992-1993 Member, Metabolism Study Section, DHHS, PHS, DRG, NIH
- 1992-1995 Member, Nutrition Committee, American Heart Association
- 1991 Chairman, NIDDK Review Committee, Studies of Diabetes in American Indians
- 1992 Chairman, NIDDK Review Committee, Nutrition Training Grants
- 1992 Consultant, Scientific Committee on Diabetes and Insulin Resistance, Bayer International
- 1993-Present American Heart Association, DC Affiliate, Vice Chairman, Peer Review Committee
- 1993 Chairman, NIDDK Review Committee, Studies of Diabetes Prevention in Native Americans
- 1993 Chairman, NHLBI Review Committee, Prevention of Obesity in Native American Children
- 1993 Consultant, Egg Substitutes, Eggland Corporation
- 1993-1994 NHLBI Planning Committee on Hypertension in Hispanics, Native Americans, and Asian Americans
- 1993 Review Committee, USDA, Beltsville, MD
- 1993 Chairman, US Finance Committee, X International Atherosclerosis Symposium
- 1993 Member, Board of Directors, DC Affiliate American Heart Association
- 1994 Member, AHA Clinical Nursing Research Grant Task Force
- 1994-Present Member, American Egg Board/Egg Nutrition Center Scientific Advisory Panel
- 1995-1997 Chairman, Nutrition Study Section, NIH
- 1995-Present Member, Council on Epidemiology and Prevention, AHA
- 1996-Present Member, American College of Nutrition
- 1995-Present Member, NIH Expert Panel on the Identification, Evaluation, and Treatment of Obesity in Adults at High Risk for Cardiovascular Disease.
- 1996-1997 Council Chair, Women's Health Initiative, NIH
- 1996-Present Chair, Research Committee, AHA DC Affiliate
- 1997-Present Lipid Advisory Committee, Unileven Corporation

1998-Present Vice Chairperson, American Heart Association, Nutrition Committee
1998-Present Member, Lipton Lipids Advisory Board

INSTITUTIONAL COMMITTEES

- Washington Hospital Center and Medlantic Research Institute Research Committees
- Washington Hospital Center Cancer Institute Oversight Committee
- Washington Hospital Center Committee on Continuing Medical Education
- Steering Committee, Information Systems, Medlantic Healthcare Group
- Medlantic Healthcare Group Advisory Board on Outcomes Research

EDITORIAL BOARDS

1984-Present Editorial Board, *Journal of Lipid Research*
1990-Present Editorial Board, *Diabetes Care*
1989-Present Editorial Board, *Atherosclerosis*
1990-1991 Associate Editor, *Diabetes Care*
1991-1995 Associate Editor, *Journal of Lipid Research*
1991-Present Associate Editor, *Acta Diabetologica*
1993-Present Editorial Board, *Arteriosclerosis, Thrombosis, and Vascular Biology*
1994-1997 US Editor, *Endocrinology & Metabolism*
1995-Present Associate Editor, *Nutrition, Metabolism and Cardiovascular Diseases*

MEETINGS AND CONFERENCES - Selected

1985 Speaker - Symposium on Current Research into Clinical Applications of the Second Generation Sulfonylurea Micronase; UpJohn Company
Speaker - Workshop on the Independent Effects of Dietary Lipids on Etiology of Coronary Heart Disease; Dallas, TX

1986 Speaker - Symposium on Lipoprotein Metabolism and Its Relation to Coronary Heart Disease; Helsinki, Finland

1987 Co-organizer - Conference on Effects of Diet on Apoprotein Metabolism; February 19-21, Phoenix, AZ
Speaker, IV Milano International Symposium on Atherosclerosis
Speaker, NIH Workshop on Interactions Between Obesity, Sex Hormones, and Insulin Resistance in the Regulation of HDL Cholesterol
International Symposium on Atherosclerosis, Development, Complications and Treatment
Speaker, NIH Workshop on Endogenous Insulin, Sex Hormone and Coronary Heart Disease

1988 Co-organizer, Workshop on Lipoprotein Kinetics
Speaker, NHLBI Workshop on Obesity - Bowman Gray School of Medicine

- Guest Lecturer - International Study Group for Implantable Insulin Devices
Speaker, NHLBI Workshop on Hypertension and Lipid Metabolism
Co-Chairman, International Symposium on Insulin and the Cell Membrane,
Bratislava, Czechoslovakia
Speaker, Satellite on Nutrition and Atherosclerosis, 8th International Congress
of Atherosclerosis
Speaker, Satellite on Diabetes and Atherosclerosis, 8th International Congress
of Atherosclerosis
- 1989 Speaker, Conference on Diabetes in American Indians and Alaskan Natives
Speaker, North American Association for the Study of Obesity
- 1990 Speaker, Health Conference, Gila River Indian Community
- 1991 Speaker, IV Milano International Symposium on Diabetes Mellitus
Speaker, IDF Symposium on Diabetes and Cardiovascular Disease
PHS Physicians and Health Care Provider Diabetes Control Conference
Speaker, Symposium on Diabetes & Vascular Complications, Merrill Dow
- 1992 Grand Rounds, National Institutes of Health
Speaker, Diabetes Study Group, Baylor College of Medicine
Presenter, AHA Science Writers Forum
Speaker, NIH Conference on Minority Health
Speaker, U.S.-Japan Malnutrition Panel, Conference on Molecular and
Comparative Nutrition
Co-Chairman, International Symposium on Dietary Fat and Insulin Action
Speaker, Symposium on Nutrition and Minority Health: The Interplay of
Food, Culture, Genetics and Environment, National Academy of Sciences
- 1993 Speaker, ADA Consensus Conference on Treatment of Hyperlipidemia
Grand Rounds, Department of Neurosurgery, George Washington University
Speaker, Conference on Nutrition and Cardiovascular Disease, AHA,
Washington, DC
Speaker, Symposium on Therapy of Hyperlipidemia in Diabetes, ADA, Las
Vegas, NV
Speaker, Symposium on Women and Minorities in Biomedical Research,
NHLBI, Washington, DC
- 1993 Speaker, Symposium on Diabetes and Hyperlipidemia, Tokyo, Japan
Speaker, Symposium on Obesity and Nutrition, XV International Congress of
Nutrition, Adelaide, Australia
Speaker, Symposium on Dyslipoproteinemia in Diabetes Mellitus, XXXIII
Annual Conference of the Mexican Society of Nutrition and
Endocrinology, Puerto Vallarta, Mexico

- 1994
- Speaker, Indian Health Service 7th Annual Research Conference, Tucson, AZ
 - Speaker, Symposium on Genetic Influences on Lipoprotein Response to Dietary Fat and Cholesterol, (FASEB), Anaheim, CA
 - Speaker, Symposium on Atherosclerosis: An Integrated Approach to Patient Care", The Washington Hospital Center, Washington, DC
 - Speaker, Endocrine Rounds, Medical College of Pennsylvania, Philadelphia, PA
 - Speaker, Beltsville Human Nutrition Research Center, Beltsville, MD
 - Panelist, Conference on Nutrition Research/Cardiovascular Disease Past, Present, Future. Panel I - Research Issues for Specific Population Groups, American Heart Association, Dallas, TX
- 1995
- Speaker, Columbia Hospital for Women Staff meeting, Washington, DC
 - Speaker, Symposium on Diabetes in Alaska - Preventing Complications, Alaska Native Medical Center, Anchorage, AK
 - Speaker, International Conference on Atherosclerosis, Cancer, Diabetes, and Antioxidants, Nutrition Information Center, New York City, NY
 - Speaker, Symposium on the Insulin Resistance Syndrome, Annual Meeting of the American Psychosomatic Society, New Orleans, LA
 - Speaker, American Egg Board and Egg Nutrition Center Scientific Panel Meeting, Washington, DC
 - Speaker, Annual Meeting of the American Psychosomatic Society, "Dyslipidemia and Coronary Risk", New Orleans, LA
 - Speaker, Symposium on Cholesterol Lowering Trials: New Results and Emerging Issues, Sponsored by Bristol-Myers Squibb, Palm Beach, FL
 - Speaker, Keys to Better Health: A Health and Wellness Conference for Women of All Ages, presented by the Washington Hospital Center, Washington, DC
 - Speaker, Tenth Annual Alexander Marble Lecturer, Joslin Diabetes Center, Boston, MA
 - Speaker, Symposium on Atherosclerosis: Clinical Problem Solving for the Practitioner, Sponsored by Washington Heart at Washington Hospital Center
 - Session Chairman, American Heart Association Scientific Sessions, Scientific Conference on the Efficacy of Hypocholesterolemic Dietary Interventions, San Antonio, TX
 - Speaker, American Diabetes Association's 55th Annual Meeting and Scientific Sessions, Atlanta, GA
 - Speaker, Fourth Annual Bioethics Committee Appreciation Dinner and Educational Seminar, Washington Hospital Center, Washington, DC
 - Speaker, Symposium by the American Diabetes Association, Arizona Affiliate, Inc., Scottsdale, AZ
 - Speaker, Washington Hospital Center/Medlantic Research Institute Endocrine Conference, Washington, DC

Speaker, American Heart Association Nation's Capital Affiliate's Symposium on Women's Health, Washington, DC

Speaker, American Heart Association's Scientific Conference on Hormonal, Metabolic, and Cellular Influences on Cardiovascular Disease in Women, San Diego, CA

Speaker, American Heart Association's Nutrition Seminar, Anaheim, CA

Speaker, International Olive Oil Council Conference, Fat and the Healthy American Diet A Capital Perspective, Washington, DC

Speaker, National Rehabilitation Hospital Symposium. OB/GYN Symposium "Health Care for Women in the 21st Century," Washington, DC

1996

Speaker, The 6th Milano International Meeting on Diabetes, Milan, Italy

Speaker, Symposium by the Pennington Biomedical Research Center, Baton Rouge, LA

Speaker, University of Maryland at College Park, Department of Nutrition and Food Science's Spring 1996 Colloquium Series, College Park, MD

Speaker, Howard University Health Sciences Center 10th Annual W. Lester Henry, Jr., M.D. Symposium, Washington, DC

Speaker, Medical Grand Rounds, University of Rochester Medical Center, School of Medicine and Dentistry, Department of Medicine, Rochester, NY

Speaker, The University of Chicago/The American Heart Association of Metropolitan Chicago Symposium, The Mediterranean Diet: Monounsaturated Fats in Health and Disease

Speaker, US-Japan Symposium in Cardiovascular Research, Honolulu, HI

Speaker, US Immigration and Naturalization Service, Washington, DC

Speaker, Eleventh Scientific Meeting of the American Society of Hypertension, New York, NY

Speaker, American Diabetes Associations' Scientific Sessions' 56th Annual Scientific Meeting and Sessions, San Francisco, CA

Speaker, National Institutes of Health, Clinical, Social and Scientific Foundations of Geriatric Medicine, Bethesda, MD

Speaker, Third International Smolenice Insulin Symposium on Lipids and Syndromes of Insulin Resistance: From Molecular Biology to Clinical Medicine, Slovak Republic

American Diabetes Association's Women's Health Summit: Treating the Whole Woman, Washington, DC

OB/GYN Grand Rounds, Prince George's Hospital Center, Continuing Medical Education Committee, Women's Health Initiative, Cheverly, MD

Speaker, 69th American Heart Association Scientific Sessions, New Orleans, LA

Speaker, The Second Annual EASD/JDFI Oxford Conference, The Diabetes Research Foundation, Juvenile Diabetes Foundation International, Oxford, United Kingdom

Speaker, International Symposium on Nutrition and Atherosclerosis, Osaka, Japan

1997

Speaker, National Diabetes Consultants Meeting, San Diego, CA

Invited expert, Ideation session, FNESC Subcommittee on Insulin Resistance, International Life Sciences Institute (ILSI), Washington, DC

Speaker, 1997 Baltimore Hyperlipidemia Consultants Meeting, Baltimore, MD

Speaker, U.S. Public Health Service's Office on Women's Health; National Conference on Minority Women's Health, Washington, DC

Speaker, American Heart Association Heart Month Health Education Program, Washington, DC

Course Director, Washington Hospital Center/Medlantic Research Institute CME Symposium: Diagnosis and Management of Ischemic Heart Disease in Women, Washington, DC

Speaker, European Association for the Study of Diabetes (EASD) Lipoprotein Study Group Workshop, Sorrento, Italy

Invited participant, Source Food Technology, Scientific Advisory Council, Chicago, IL

Speaker, 4th International Symposium on Multiple Risk Factors in Cardiovascular Disease, Washington, DC

Speaker, Women's Health Initiative Northeast Regional Meeting, Weehawkin, NJ

Speaker, American Diabetes Association 57th Annual Scientific Sessions, Boston, MA

Invited lecturer, 9th International Dresden Symposium on Lipoproteins and Atherosclerosis, Dresden, Germany

Invited participant, Merck & Co., Inc. 1997 National Lipid Advisory Board Meeting, Boston, MA

Speaker, The Endocrine Society, Symposium, "Improving Minority Participation in Clinical Trials," Minneapolis, MN

Speaker, 16th International Diabetes Federation Congress, Helsinki, Finland

Invited participant, Merck & Co., Inc. meeting, "The Role of Statins in Patients with Hypertriglyceridemia," Irving, TX

Macrovascular Disease Breakout Group Participant, National Institutes of Health Symposium, "Diabetes Mellitus: Challenges and Opportunities," Bethesda, MD

Panel member, NHLBI Special Emphasis Panel, "Prevention and Treatment of Cardiovascular Disease in Diabetes Mellitus," Bethesda, MD

Speaker, Harlem Hospital Center Conference, "Critical Issues in Cardiovascular and Pulmonary Disease Among African Americans," New York, NY

Speaker, National Science Foundation Women's Health Lecture: Breast Cancer and Cardiac Disease, Arlington, VA

Invited faculty member, American Heart Association Syndrome X Seminar, "Insulin Resistance Syndrome and Cardiovascular Disease," Bethesda, MD

Participant, American Heart Association meeting, Orange County, CA

Participant, National Institutes of Health Workshop, "Beyond Hunt Valley: Research on Women's Health for the 21st Century: A Public Hearing and Scientific Workshop," Bethesda, MD

Speaker, American Diabetes Association Consensus Development Conference, "Insulin Resistance Syndrome," Los Angeles, CA

Invited presenter, Diabetes physician conference, "Diabetes: New Initiatives in Treatment and Prevention," Gallup, NM

1998

Speaker, American Diabetes Association, Chicago, IL

Moderator, 1998 International Conference on the Mediterranean Diet, Cambridge, MA

Core Committee Member/Presenter, Washington Hospital Center/Medlantic Research Institute CME symposium, "Diabesity: New Advances in the Treatment of Type 2 Diabetes and Obesity," Washington, DC

Speaker, "Women's Health Issues in Interventional Cardiology," Washington, DC

Speaker, Columbia Hospital for Women CME Lecture, Washington, DC

Invited faculty member, Bristol-Myers Squibb Diabetes Education Faculty Conference, Marco Island, FL

Speaker, UCSF Cardiovascular Health Conference, San Francisco, CA

Participant, International Life Sciences Institute (ILSI) North American Project Committee on Insulin Resistance, Washington, DC

Presenter, Diabetes Education Faculty Conference, Palm Desert, CA

Invited speaker, American Diabetes Association Conference, "Type 2 Diabetes Mellitus in the Elderly: Challenges and Opportunities," Tempe AZ

Speaker, Women's Health Initiative Clinic for Congressional Staff, Washington, DC

Participant, 10th Annual Indian Health Service Research Conference, Albuquerque, NM

Participant, American Heart Association/Industry Nutrition Advisory Panel Coalition meeting, Irving, TX

Invited participant, NIH Surrogate Marker Planning Meeting, Bethesda, MD

Faculty member, American Heart Association Conference, "Obesity: Impact on Cardiovascular Disease," Amelia Island, FL

Conference speaker, "Diabetes in Native Americans: Management and Prevention," Oklahoma City, OK

Speaker, Cardiology Research Foundation Focus Group, "Targeting Women's Cardiovascular Risk Factors," Washington, DC

Speaker, Merck US Human Health Symposium, "Contemporary Risk Management of Diabetic Dyslipidemia," Chicago, IL
Chair, Oral Abstract Session on *Complications, Macro*, American Diabetes Association Council on Epidemiology and Statistics, Chicago, IL
Faculty member, 13th International Interdisciplinary Conference on Hypertension in Blacks, Charleston, SC

COMMUNITY SERVICE

1983-1986 Decade Chairman of Alumni Fund Council, Bryn Mawr College
1984-1988 Education Committee, Arizona Diabetes Association
1991-Present D.C. CARE
1992 Development Committee, AHA, Nation's Capitol Affiliate
1993 Sponsor, Dance for Heart, American Heart Association, DC Affiliate
1993 Nutrition Curriculum Planning Committee, Montgomery County School System
1993-Present Board of Directors, American Heart Association, DC Affiliate

MEMBERSHIPS

- American Diabetes Association
- American Federation of Clinical Research
- American Society of Biochemistry and Molecular Biology
- American Society for Clinical Nutrition
- Association of Black Cardiologists
- Council on Epidemiology and Prevention, International Federation of Cardiology
- Fellow, Council on Arteriosclerosis, American Heart Association
- International Study Group for Implantable Insulin Delivery Systems
- Washington Academy of Medicine

PUBLICATIONS

Original papers:

1. Kritchevsky D, **Howard BV**. The lipids of human diploid cell strain W1-38. *Ann Med Exp Fenn* 44: 343-347, 1966.
2. **Howard BV**. Lipid metabolism in diploid human cells in culture. PhD Dissertation, University of Pennsylvania, 1968.
3. **Howard BV**, Kritchevsky D. The lipids of normal diploid (W1-38) and SV40 transformed human cells. *Int J Cancer* 4: 393-402, 1969.

4. **Howard BV**, Kritchevsky D. The source of cellular lipid in the human diploid cell strain W1-38. *Biochim Biophys Acta* 187: 293-301, 1969.
5. **Howard BV**, Kritchevsky D. Free fatty acids in cultured cells. *Lipids* 5: 49-55, 1970.
6. **Howard BV**, Estes MK, Pagano JS. The uptake of SV₄₀ DNA by nonpermissive cells in the presence of DEAE-dextran. *Biochim Biophys Acta* 228: 105-116, 1971.
7. Bailey JM, **Howard BV**, Dunbar LM, Tillman SF. Control of lipid metabolism in cultured cells. (Part of American Oil Chemists Society Symposium on Lipids in Cultured Cells). *Lipids* 7: 125-134, 1972.
8. **Howard BV**, Morris HP, Bailey JM. Ether-lipids, -glycerol phosphate dehydrogenase, and growth rate in tumors and cultured cells. *Cancer Res* 32: 1533-1538, 1972.
9. Bailey JM, **Howard BV**, Tillman SF. Lipid metabolism in cultured cells, XI. Utilization of serum triglycerides. *J Biol Chem* 248: 1240-1247, 1973.
10. **Howard BV**, Howard WJ, Bailey JM. Acetyl coenzyme A synthetase and the regulation of lipid synthesis from acetate in cultured cells. *J Biol Chem* 249: 7912-7921, 1974.
11. Shore RN, **Howard BV**, Howard WJ, Snelley WB. Lipoid proteinosis: Demonstration of normal lipid metabolism in cultured cells. *Arch Derm* 110: 591-594, 1974.
12. **Howard BV**, de la Llera MM, Howard WJ. A new method for the establishment of diploid fibroblast cell cultures from human foreskins (39528). *Proc Soc Exp Biol Med* 153: 280-283, 1976.
13. **Howard BV**, Howard WJ, Kefalides NA. Regulation of lipid synthesis from acetate in diploid fibroblast cultures - variation with passage level and stage of cell growth. *J Cell Physiol* 89: 325-336, 1976.
14. **Howard BV**, Howard WJ, de la Llera MM, Kefalides NA. Triglyceride accumulation in cultured human fibroblasts. The effects of hypertriglyceridemic serum. *Atherosclerosis* 23: 521-534, 1976.
15. **Howard BV**, Macarak EJ, Gunson D, Kefalides NA. Characterization of the collagen synthesized by endothelial cells in culture. *Proc Nat Acad Sci* 73: 2361-2364, 1976.
16. Rothblat GH, Arbogast L, Ouellette L, **Howard BV**. Preparation of delipidized serum protein for use in cell culture systems. *In Vitro* 12: 554-557, 1976.
17. **Howard BV**. Acetate as a carbon source of lipid synthesis in cultured cells. *Biochim Biophys Acta* 448: 145-151, 1977.

18. **Howard BV.** Uptake of very low density lipoprotein triglyceride by bovine aortic endothelial cells in culture. *J Lipid Res* 18: 561-571, 1977.
19. Macarak EJ, **Howard BV**, Kefalides NA. Properties of calf endothelial cells in culture. *Lab Invest* 36: 62-67, 1977.
20. **Howard BV**, Savage PH, Bennion LJ, Bennett PH. Lipoprotein composition in diabetes mellitus. *Atherosclerosis* 30: 153-162, 1978.
21. de la Llera M, Rothblat G, **Howard BV**. Cell triacylglycerol accumulation from very low density lipoproteins isolated from normal and hypertriglyceridemic human sera. *Biochim Biophys Acta* 574: 414-422, 1979.
22. Flock EV, Bennett PH, Savage PJ, Webner CJ, **Howard BV**, Rushforth NB, Miller M. Bimodality of glycosylated hemoglobin distribution in Pima Indians. Relationship to fasting hyperglycemia. *Diabetes* 28: 984-989, 1979.
23. **Howard BV**, Mott DM, Fields RM, Bennett PH. Insulin stimulation of glucose entry in cultured human fibroblasts. *J Cell Physiol* 101: 129-138, 1979.
24. **Howard BV**, Savage PJ, Nagulesparan M, Bennion LJ, Davis M and Bennett PH. Changes in plasma lipoproteins accompanying diet therapy in obese diabetics. *Atherosclerosis* 33: 445-456, 1979.
25. **Howard BV**, Savage PJ, Nagulesparan M, Bennion LJ, Unger RH, Bennett PH. Evidence for marked sensitivity to the antilipolytic action of insulin in obese maturity-onset diabetics. *Metabolism* 28: 744-750, 1979.
26. Macarak EJ, delaLlera M, Kefalides NA, **Howard BV**. Comparison of the intracellular lipids of cultured vascular endothelial cells and fibroblasts. *In Vitro* 15: 936-940, 1979.
27. Mott DM, **Howard BV**, Bennett PH. Stoichiometric binding and regulation of insulin receptors on human diploid fibroblasts using physiologic insulin levels. *J Biol Chem* 254: 8762-8767, 1979.
28. Bennion LJ, Mott DM, **Howard BV**. Oral contraceptives raise the cholesterol saturation of bile by increasing biliary cholesterol secretion. *Metabolism* 29: 18-22, 1980.
29. Hidaka H, **Howard BV**, Kosmakos F, Fields RM, Craig JW, Bennett PH, Lerner JL. Insulin stimulation of glycogen synthase in cultured human diploid fibroblasts. *Diabetes* 29: 806-810, 1980.

30. **Howard BV**, Fields RM, Mott DM, Savage PJ, Nagulesparen M, Bennett PJ. Diabetes and cell growth - lack of differences in growth characteristics of fibroblasts from diabetic and nondiabetic Pima Indians. *Diabetes* 29: 119-124, 1980.
31. **Howard BV**, Zech L, Davis M, Bennion LJ, Savage PJ, Nagulesparan M, Bilheimer D, Bennett PH, Grundy SM. Studies of very low density lipoprotein triglyceride metabolism in an obese population with low plasma lipids: Lack of influence of body weight or plasma insulin. *J Lipid Res* 21: 1032-1041, 1980.
32. Wasada T, **Howard BV**, Dobbs RE, Unger RH. Evidence for a role of free fatty acids in the regulation of somatostatin secretion in normal and Alloxan diabetic dogs. *J Clin Invest* 66: 511-516, 1980.
33. Hara H, Hidaka H, Kosmakos FC, Mott DM, Vasquez G, **Howard BV**, Bennett PH. Characterization of the human insulin receptor solubilized from cultured fibroblasts and erythrocyte cell membrane preparations. *J Clin Endocrinol Metab* 52: 17-22, 1981.
34. Hidaka H, **Howard BV**, Ishibashi F, Kosmakos FC, Craig J, Bennett PH, Larner JL. Effect of pH and 3-hydroxybutyrate on insulin binding and action in cultured human fibroblasts. *Diabetes* 30: 402-406, 1981.
35. **Howard BV**, Hidaka H, Ishibashi F, Fields RM, Bennett PH. Type II diabetes and insulin resistance: Evidence for lack of inherent cellular defects in insulin sensitivity. *Diabetes* 30: 562-567, 1981.
36. **Howard BV**, Mott DM, Hidaka H, Fields RM, Katzeff H, Howard WJ, Bennett PH. Cell culture studies of a patient with congenital lipotrophic diabetes -normal insulin binding with alterations in intracellular glucose metabolism and insulin action. *Metabolism* 30: 845-852, 1981.
37. Ishibashi F, Bennett PH, **Howard BV**. Alloxan action on glucose metabolism in cultured fibroblasts. II. Effects on pentos-monophosphate shunt and tricarboxylic acid pathways. *Amer J Physiol* 240: E645-648, 1981.
38. Ishibashi F, Hidaka H, Fields RM, **Howard BV**, Bennett PH. Alloxan action on glucose metabolism in cultured fibroblasts. I. Stimulation and inhibition of glucose utilization. *Amer J Physiol* 240: E640-644, 1981.
39. Ishibashi F, **Howard BV**. Alloxan and H₂O₂ action on glucose metabolism in cultured fibroblasts: Generation of oxygen-containing free radicals as a mechanism of Alloxan action. *J Biol Chem* 256: 12134-12139, 1981.
40. Wasada T, **Howard BV**, McCorkle K, Harris V, Unger RH. High plasma free fatty acid levels contribute to the hypersomatostatinemia of insulin deficiency. *Diabetes* 30: 358-361, 1981.

41. Wasada T, McCorkle K, Harris V, Kawai K, **Howard BV**, Unger RH. Effect of gastric inhibitory polypeptide on plasma levels of chylomicron triglycerides in dogs. *J Clin Invest* 68: 1106-1107, 1981.
42. Ishibashi F, Hidaka H, **Howard BV**. Glucose enhancement of insulin action: elevated glucose levels increase insulin stimulation of 2-deoxyglucose uptake in cultured human fibroblasts. *J Clin Endocrinol Metab* 54: 34-39, 1982.
43. Ishibashi F, **Howard BV**. Insulin stimulation of glucose oxidation in cultured human skin fibroblasts. *Metabolism* 31: 477-483, 1982.
44. Reitman JS, Kosmakos FC, **Howard BV**, Taskinen MR, Kuusi T, Nikkila EA. Characterization of lipase activities in obese Pima Indians: Decreases with weight reduction. *J Clin Invest* 70: 791-797, 1982.
45. Vasquez B, Ishibashi F, **Howard BV**. Measurement of intracellular volume in monolayers of cultured cells. *In Vitro* 18: 643-649, 1982.
46. Egusa G, Brady DW, Grundy SM, **Howard BV**. Isopropanol precipitation method for the determination of apolipoprotein B specific activity and plasma concentrations during metabolic studies of very low density lipoprotein and low density lipoprotein apolipoprotein B. *J Lipid Res* 24: 1261-1267, 1983.
47. Hidaka H, Ishibashi F, Larner J, **Howard BV**. Effect of temperature on insulin binding and action in cultured human fibroblasts. *Life Sciences* 33: 1157-1165, 1983.
48. **Howard BV**, Davis M, Pettitt DJ, Knowler WC, Bennett PH. Plasma and lipoprotein cholesterol and triglyceride concentrations in the Pima Indians: distributions differing from those of Caucasians. *Circulation* 68: 714-724, 1983.
49. **Howard BV**, Reitman JS, Vasquez B, Zech L. Very-low-density lipoprotein triglyceride metabolism in non-insulin-dependent diabetes mellitus: Relationship to plasma insulin and free fatty acids. *Diabetes* 32: 271-276, 1983.
50. Mott DM, **Howard BV**, Savage PJ, Nagulesparan M. Altered insulin binding to monocytes and diploid fibroblasts from obese donors. *J Clin Endocrinol Metab* 57: 1-7, 1983.
51. Andrews J, Kashiwagi A, Verso MA, Vasquez B, **Howard BV**, Foley JE. Effects of four-day fast on triglyceride mobilization in human adipocytes. *Int J Obesity* 8: 355-363, 1984.

52. Bogardus C, Lillioja S, **Howard BV**, Reaven G, Mott DM. Relationships between insulin secretion, insulin action and fasting plasma glucose concentration in nondiabetic and noninsulin-dependent diabetic subjects. *J Clin Invest* 74: 1238-1246, 1984.
53. Egusa G, Bennett PH, Aleck K, Tayler R, **Howard BV**. Hyperlipidemia and arteriosclerotic cardiovascular disease in the Polynesian population of Rarotonga. *Atherosclerosis* 53: 241-254, 1984.
54. **Howard BV**, Klimes I, Vasquez B, Brady D, Nagulesparan M, Unger RH. The antilipolytic action of insulin in obese subjects with resistance to its glucoregulatory action. *J Clin Endocrinol Metab* 58: 544-548, 1984.
55. **Howard BV**, Knowler WC, Vasquez B, Kennedy AL, Pettitt DJ, Bennett PH. Plasma and lipoprotein cholesterol and triglyceride in the Pima Indian population. Comparison of diabetics and nondiabetics. *Arteriosclerosis* 4: 462-471, 1984.
56. Klimes I, **Howard BV**, Mott DM. Sodium-potassium pump in cultured fibroblasts from obese donors; no evidence for an inherent decrease of basal or insulin-stimulated activity. *Metabolism* 33: 317-322, 1984.
57. Beltz WF, Kesaniemi YA, **Howard BV**, Grundy SM. Development of an integrated model for analysis of the kinetics of apolipoprotein B in plasma very low density lipoproteins, intermediate density lipoproteins and low density lipoproteins. *J Clin Invest* 76: 575-585, 1985.
58. Egusa G, Beltz WF, Grundy SM, **Howard BV**. Influence of obesity on the metabolism of apolipoprotein B in humans. *J Clin Invest* 76: 596-603, 1985.
59. **Howard BV**, Egusa G, Beltz WF, Kesaniemi YA, Grundy SM. Compensatory mechanisms governing the concentration of plasma low density lipoprotein. *J Lipid Res* 27: 11-20, 1986.
60. **Howard BV**, Xiaoren P, Harper I, Foley JE, Cheung ME, Taskinen MR. Effect of sulfonylurea therapy on plasma lipids and high-density lipoprotein composition in non-insulin-dependent diabetes mellitus. *Am J Med* 79(Suppl 3b): 78-85, 1985.
61. Lillioja S, Bogardus C, Mott DM, Kennedy AL, Knowler WC, **Howard BV**. Relationship between insulin-mediated glucose disposal and lipid metabolism in man. *J Clin Invest* 75: 1106-1115, 1985.
62. Taskinen MR, Bogardus C, Kennedy A, **Howard BV**. Multiple disturbances of free fatty acid metabolism in noninsulin-dependent diabetes. Effect of oral hypoglycemic therapy. *J Clin Invest* 76: 637-644, 1985.

63. Taskinen MR, Foley JE, Kosmakos FC, Brady D, **Howard BV**. Lipoprotein lipase activity and adiposity in the Pima Indians - A study of three different fat depots. *J Obesity Weight Reg* 4: 210-220, 1985.
64. Abbott W, Thuillez P, **Howard BV**, Bennett PH, Salans LB, Cushman SW, Reaven GM, Foley JE. Body composition, adipocyte size, free fatty acid concentration, and glucose tolerance in children of diabetic pregnancies. *Diabetes* 35: 1077-1080, 1986.
65. Bogardus C, Taskinen MR, Zawadzki J, Lillioja S, Mott DM, **Howard BV**. Increased resting metabolic rates in obese subjects with non-insulin-dependent diabetes mellitus and the effect of sulfonylurea therapy. *Diabetes* 35: 1-5, 1986.
66. Kush RD, Young JB, Katzefff HL, Danforth E Jr, Garrow JS, Scheidigger K, Ravussin E, **Howard BV**, Sims EAH, Horton ES, Landsberg L. Effect of diet on energy expenditure and plasma norepinephrine in lean and obese Pima Indians. *Metabolism* 35: 1110-1120, 1986.
67. Lillioja S, Foley J, Bogardus C, Mott DM, **Howard BV**. Free fatty acid metabolism and obesity in man: In vivo in vitro comparisons. *Metabolism* 35: 505-514, 1986.
68. Taskinen MR, Beltz WF, Harper I, Fields RM, Schonfeld G, Grundy SM, **Howard BV**. Effects of NIDDM on very-low-density lipoprotein triglyceride and apolipoprotein B metabolism. Studies before and after sulfonylurea therapy. *Diabetes* 35: 1268-1277, 1986.
69. Abbott WGH, Lillioja S, Young AA, Zawadzki JK, Yki-Jarvinen H, Christin L, **Howard BV**. Relationships between plasma lipoprotein concentrations and insulin action in an obese hyperinsulinemic population. *Diabetes* 36: 897-904, 1987.
70. **Howard BV**, Abbott WGH, Beltz WF, Harper IT, Fields RM, Grundy SM, Taskinen MR. Integrated study of low-density lipoprotein metabolism and very low density lipoprotein metabolism in non-insulin-dependent diabetes. *Metabolism* 36: 870-877, 1987.
71. **Howard BV**, Abbott WGH, Egusa G, Taskinen MR. Coordination of very low density lipoprotein triglyceride and apolipoprotein B metabolism in humans: Effects of obesity and non-insulin-dependent diabetes mellitus. *Am Heart J* 113: 522-526, 1987.
72. **Howard BV**, Pan XR, Harper I, Kuusi T, Taskinen MR. Lack of sex differences in high density lipoproteins in Pima Indians. *Arteriosclerosis* 7: 292-300, 1987.
73. Yki-Jarvinen H, Bogardus C, **Howard BV**. Hyperglycemia stimulates carbohydrate oxidation in humans. *Am J Physiol* 253: E376-E382, 1987.

74. Abbott WGH, **Howard BV**, Christin L, Freymond D, Lillioja S, Boyce VL, Anderson TE, Bogardus C, Ravussin E. Short-term energy balance: Relationship with protein, carbohydrate and fat balances. *Am J Physiol* 255: E332-337, 1988.
75. Lillioja S, Mott DM, **Howard BV**, Bennett PH, Yki-Jarvinen H, Freymond D, Nyomba BL, Zurlo F, Swinburn B, Bogardus C. Impaired glucose tolerance as a disorder of insulin action. Longitudinal and cross-sectional studies in Pima Indians. *N Engl. J Med* 318: 1217-1225, 1988.
76. Ravussin E, Lillioja S, Knowler WC, Christin L, Freymond D, Abbott WGH, Boyce V, **Howard BV**, Bogardus C. Reduced rate of energy expenditure as a risk factor for body-weight gain. *N Engl. J Med.* 318: 467-472, 1988.
77. Zawadzki JK, Wolfe RR, Mott DM, Lillioja S, **Howard BV**, Bogardus C. Increased rate of Cori cycle in obese subjects with NIDDM and effect of weight reduction. *Diabetes* 37: 154-159, 1988.
78. Abbott WGH, Boyce VL, Grundy SM, **Howard BV**. Effects of replacing saturated fat with complex carbohydrate in diets of subjects with NIDDM. *Diabetes Care* 12: 102-107, 1989.
79. Christin L, Ravussin E, Bogardus C, **Howard BV**. The effect of propranolol on free fatty acid mobilization and resting metabolic rate. *Metabolism* 38: 439-444, 1989.
80. Abbott WGH, **Howard BV**, Ruotolo G, Ravussin E. Energy expenditure in humans: effects of dietary fat and carbohydrate. *Amer J Physiol* 258: E347-E351, 1990.
81. Abbott WGH, Swinburn BA, Ruotolo G, Hara H, Patti L, Harper I, Grundy SM, **Howard BV**. Effect of a high-carbohydrate, low-saturated-fat diet on apolipoprotein B and triglyceride metabolism in Pima Indians. *J Clin. Invest* 86: 642-650, 1990.
82. Hara H, **Howard BV**. Characterization of LDL binding in TR 715-19 cells: A high capacity, stable line for evaluating the binding of LDL to the human LDL receptor. *Atherosclerosis* 83: 155-165, 1990.
83. Lee ET, Welty TK, Fabsitz R, Cowan LD, Le NA, Oopik AJ, Cucchiara AJ, Savage PJ, **Howard BV**. The Strong Heart Study - A study of cardiovascular disease in American Indians: Design and methods. *Am J Epidemiol* 132: 1141-1145, 1990.
84. Nelson RG, Sievers ML, Knowler WC, Swinburn BA, Pettitt DJ, Saad MF, Liebow IM, **Howard BV** and Bennett PH. Low incidence of fatal coronary heart disease in Pima Indians despite high prevalence of non-insulin-dependent diabetes. *Circulation* 81: 987-995, 1990.

85. Ruotolo G, Micossi P, Galimberti G, Librenti MC, Petrella G, Marcovina S, Pozza G, **Howard BV**. Effects of intraperitoneal vs. subcutaneous insulin administration on lipoprotein metabolism in Type I diabetes. *Metabolism* 39: 598-604, 1990.
86. Hannah JS, Verdery RB, Bodkin NL, Hansen BC, Le NA, **Howard BV**. Changes in lipoprotein concentrations during the development of noninsulin-dependent diabetes mellitus in obese rhesus monkeys (*Macaca mulatta*). *J Clin Endocrinol Metab* 72:1067-1072, 1991.
87. **Howard BV**, Abbott WGH, Swinburn BA. Evaluation of metabolic effects of substitution of complex carbohydrates for saturated fat in individuals with obesity and NIDDM. *Diabetes Care* 14: 786-795, 1991.
88. **Howard BV**, Bogardus C, Ravussin E, Foley JE, Lillioja S, Mott DM, Bennett PH, and Knowler WC. Studies of the etiology of obesity in Pima Indians. *Am J Clin Nutr* 53 (Suppl. 6):1577S-1585S, 1991.
89. Hu YH, Pan XR, Liu AA, Li GW, **Howard BV**, Bennett PH. Coronary heart disease and diabetic retinopathy in newly diagnosed diabetes in Da Qing, China: The Da Qing IGT and Diabetes Study. *Acta Diabetologia* 28: 169-173, 1991.
90. Knowler WC, Pettitt DJ, Saad MF, Charles MA, Nelson RG, **Howard BV**, Bogardus C, Bennett PH. Obesity in the Pima Indians: Its magnitude and relationship with diabetes. *Am J Clin Nutr* 53 (Suppl. 6):1543S-1551S, 1991.
91. Patti L, Swinburn B, Riccardi G, Rivellese AA, **Howard BV**. Alterations in very low density lipoprotein subfractions in normotriglyceridemic non-insulin-dependent diabetics. *Atherosclerosis* 91:15-23, 1991.
92. Saad MF, Lillioja S, Nyomba BL, Castillo C, Ferraro R, De Gregorio M, Ravussin E, Knowler WC, Bennett PH, **Howard BV**, Bogardus C. Racial differences in the relation between blood pressure and insulin resistance. *N Engl J Med* 324: 733-739, 1991.
93. Swinburn BA, Boyce VL, Bergman RN, **Howard BV**, Bogardus C. Deterioration in carbohydrate metabolism and lipoprotein changes induced by modern, high fat diet in Pima Indians and Caucasians. *J Clin Endocrinol Metab* 73: 156-165, 1991.
94. Hara H, Abbott WGH, Patti L, Ruotolo G, Swinburn B, Fields RM, Kataoka S, **Howard BV**. Increased receptor binding of low-density lipoprotein from individuals consuming a high-carbohydrate, low-saturated-fat diet. *Metabolism* 41: 1154-1160, 1992.
95. **Howard BV**, Welty TK, Fabsitz RR, Cowan LD, Oopik AJ, Le NA, Yeh J, Savage PJ, Lee ET. Risk factors for coronary heart disease in diabetic and nondiabetic Native Americans: The Strong Heart Study. *Diabetes* 41;(Suppl. 2): 4-11, 1992.

96. Welty TK, Lee ET, Cowan LD, Fabsitz RR, **Howard BV**, Le NA, Oopik AJ. The Strong Heart Study, A study of cardiovascular disease and its risk factors in American Indians. *The IHS Provider* 17(2): 32-33, 1992.
97. Folsom AR, Qamheih HT, Flack JM, Hilner JE, Liu K, **Howard BV**, Tracy RP. Plasma fibrinogen: Levels and correlates in young adults. The Coronary Artery Risk Development in Young Adults (CARDIA) Study. *Am J Epidemiol* 138: 1023-1036, 1993.
98. Haffner SM, Mykkanen L, Valdez RA, Paidi M, Stern MP, **Howard BV**. LDL size and subclass pattern in a biethnic population. *Arterioscler Thromb* 13: 1623-1630, 1993.
99. **Howard BV**. Diabetes and plasma lipoproteins in Native Americans - Studies of the Pima Indians. *Diabetes Care* 16 (Suppl 1): 284-291 1993.
100. Marcovina SM, Albers JJ, Jacobs DR Jr, Perkins LL, Lewis CE, **Howard BV**, Savage P. Lipoprotein[a] concentrations and apolipoprotein[a] phenotypes in Caucasians and African Americans: The CARDIA Study. *Arterioscler Thromb* 13: 1037-1045, 1993.
101. Pan XR, Hu YH, Li GW, Liu PA, Bennett PH, **Howard BV**. Impaired glucose tolerance and its relationship to ECG-indicated coronary heart disease and risk factors among Chinese: Da Qing IGT and Diabetes Study. *Diabetes Care* 16: 150-156, 1993.
102. Cowie CC, **Howard BV**, Harris MI. Serum lipoproteins in African Americans and Whites with non-insulin-dependent diabetes in the US population. *Circulation* 90: 1185-1193, 1994.
103. Haffner SM, Mykkanen L, Stern MP, Paidi MC, **Howard BV**. Greater effect of diabetes on LDL size in women than in men. *Diabetes Care* 17: 1164-1171, 1994.
104. **Howard BV**, Le NA, Li X, Belcher J, Flack JM, Jacobs Jr, DR, Lewis CE, Marcovina SM, Perkins LL. Concentrations of Lp(a) in Black and White young adults: Relations to risk factors for cardiovascular disease. *Ann Epidemiol* 4: 341-350, 1994.
105. Kataoka S, Paidi M, **Howard BV**. Simplified isoelectric focusing/immunoblotting determination of apoprotein E phenotype. *Clin Chem* 40: 11-13, 1994.
106. Abaira C, Colwell JA, Nuttall FQ, Sawin CT, Nagel NJ, Comstock JP, Emanuele NV, Levin SR, Henderson W, Lee HS, VA CSDM Group (**B. Howard** is part of this group). Veterans Affairs Cooperative Study on Glycemic Control and Complications in Type II Diabetes (VA CSDM): Results of the feasibility trial. *Diabetes Care* 18: 1113-1123, 1995.
107. Haffner SM, Gonzalez C, Miettinen H, **Howard BV**, Stern MP. LDL size and subclass pattern in Mexico City residents and San Antonio Mexican Americans. *Arterioscler Thromb Vasc Biol* 15: 2136-2141, 1995.

119. Welty TK, Lee ET, Yeh J, Cowan LD, Fabsitz RR, Le NA, Oopik AJ, Robbins DC, **Howard BV**. Cardiovascular disease risk factors among American Indians: The Strong Heart Study. *Am J Epidemiol* 142: 269-287, 1995.
120. Berlin E, Hannah JS, Yamane K, Peters RC, **Howard BV**. Fatty acid modification of membrane fluidity in Chinese hamster ovary (TR715-19) cells. *J Biochem Cell. Biol* 28: 1131-1139, 1996.
121. de Simone G, Devereux RB, Ganau A, Hahn RT, Saba PS, Mureddu GF, Roman MJ, **Howard BV**. Estimation of left ventricular chamber and stroke volume by limited m-mode echocardiography and validation by two-dimensional and Doppler echocardiography. *Am J Cardiol* 78: 801-807, 1996.
122. Haffner SM, Stern MP, Miettinen H, Robbins D, **Howard BV**. Apolipoprotein E polymorphism and LDL size in a biethnic population. *Arterioscler Thromb Vasc Biol* 16: 1184-1188, 1996.
123. **Howard BV** for the Strong Heart Study Investigators. Blood pressure in 13 American Indian communities: The Strong Heart Study. *Public Health Rep* 111 (Suppl 2): 47-48, 1996.
124. **Howard BV** for the Strong Heart Study Investigators. Risk factors for cardiovascular disease in individuals with diabetes - The Strong Heart Study. *Acta Diabetol* 33: 180-184, 1996.
125. **Howard BV**, Lee ET, Fabsitz RR, Robbins DC, Yeh JL, Cowan LD, Welty TK. Diabetes and coronary heart disease in American Indians: The Strong Heart Study. *Diabetes* 45 (Suppl 3): S6-S13, 1996.
126. **Howard BV**, Lee ET, Yeh JL, Go O, Fabsitz RR, Devereux RB, Welty TK. Hypertension in adult American Indians. The Strong Heart Study. *Hypertension* 28: 256-264, 1996.
127. Kataoka S, Robbins DC, Cowan LD, Go O, Yeh JL, Devereux RB, Fabsitz RR, Lee ET, Welty TK, **Howard BV**, for the Strong Heart Study Investigators. Apolipoprotein E polymorphism in American Indians and its relation to plasma lipoproteins and diabetes: The Strong Heart Study. *Arterioscler Thromb Vasc Biol* 16: 918-925, 1996.
128. Lewis CE, Funkhouser E, Raczynski JM, Sidney S, Bild DE, **Howard BV**. Adverse effect of pregnancy on high-density lipoprotein (HDL) cholesterol in young adult women. The CARDIA Study. Coronary Artery Risk Development in Young Adults. *Am J Epidemiol* 144: 247-254, 1996.

129. Oopik AJ, Dorogy M, Devereux RB, Yeh JL, Okin PM, Lee ET, Cowan L, Fabsitz RR, **Howard BV**, Welty TK. Major electrocardiographic abnormalities among American Indians aged 45 to 74 years (The Strong Heart Study). *Am J Cardiol* 78:1400-1405, 1996.
130. Paolisso G, Gambardella A, Tagliamonte MR, Saccomanno F, Salvatore T, Gualdiero P, Varricchio M, D'Onofrio F, **Howard BV**. Does free fatty acid infusion impair insulin action also through an increase in oxidative stress? *J Clin Endocrinol Metab* 81: 4244-4248, 1996.
131. Robbins DC, Knowler WC, Lee ET, Yeh JL, Go OT, Welty T, Fabsitz R, **Howard BV**. Regional differences in albuminuria among American Indians: An epidemic of renal disease. *Kidney Int* 49: 557-563, 1996.
132. Schectman G, Boerboom LE, Hannah J, **Howard BV**, Mueller RA, Kissebah AH. Dietary fish oil decreases low-density-lipoprotein clearance in nonhuman primates. *Am J Clin Nutr* 64: 215-221, 1996.
133. Tataranni PA, Baier LJ, Paolisso G, **Howard BV**, Ravussin E. Role of lipids in the development of non-insulin dependent diabetes mellitus: Lessons learned from the Pima Indians. *Lipids* 31 (Suppl): S267-S270, 1996.
134. Yamane K, Kataoka S, Le NA, Paidi M, Howard WJ, Hannah JS, **Howard BV**. Binding affinity and particle size of LDL in subjects with moderate hypercholesterolemia: Relationship with in vivo LDL metabolism. *J Lipid Res* 37: 1646-1654, 1996.
135. de Simone G, Devereux, RB, Ganau A, Hahn RT, Saba PS, Mureddu GF, Roman MJ, **Howard BV**. Estimation of Left Ventricular Chamber and Stroke Volume by Limited M-Mode Echocardiography. *Amer J Cardiol* 78:801-807,1996.
136. Cowan LD, Go OT, **Howard BV**, Devereux RB, Pettitt DJ, Fabsitz RR, Lee ET, Welty TK. Parity, postmenopausal estrogen use and cardiovascular disease risk factors in American Indian women. The Strong Heart Study. *J Women's Health* 6: 441-449, 1997.
137. Devereux RB, Roman MJ, de Simone G, O'Grady MJ, Paranicas M, Yeh JL, Fabsitz RR, **Howard BV** for the Strong Heart Study Investigators: Relations of left ventricular mass to demographic and hemodynamic variables in American Indians: The Strong Heart Study. *Circulation* 96: 1416-1423, 1997.
138. Devereux RB, Roman MJ, Panranicas M, O'Grady MJ, Wood EA, **Howard BV**, Welty TK, Lee ET, Fabsitz RB. Relations of Doppler stroke volume and its components to left ventricular stroke volume in normotensive and hypertensive American Indians: The Strong Heart Study. *Am J Hypertension* 10: 619-628, 1997.

139. Fagot-Campagna A, Narayan KMV, Hanson RL, Imperatore G, **Howard BV**, Nelson RG, Pettitt DJ, Knowler WC. Plasma lipoproteins and incidence of non-insulin-dependent diabetes mellitus in Pima Indians: Protective effect of HDL cholesterol in women. *Atherosclerosis* 128: 113-119, 1997.
140. Gray RS, Robbins DC, Wang W, Yeh JL, Fabsitz RR, Cowan LD, Welty TK, Lee ET, **Howard BV**. Relation of LDL size to the insulin resistance syndrome and coronary heart disease in American Indians: The Strong Heart Study. *Arterioscler Thromb Vasc Biol* 17: 2713-2720, 1997.
141. Hannah JS, Jablonski KA, **Howard BV**. The relationship between weight and response to cholesterol-lowering diets in women. *Int J Obesity* 21: 445-450, 1997.
142. Hannah JS, Yamane K, Kataoka S, Anthony M, **Howard BV**. High fat, high cholesterol diets alter low density lipoprotein size and binding affinity in monkeys. *Atherosclerosis* 132: 19-27, 1997.
143. Laws A, Hoen HM, Selby JV, Saad MF, Haffner SM, **Howard BV**. Differences in insulin suppression of free fatty acid levels by gender and glucose tolerance status. Relation to plasma triglyceride and apolipoprotein B concentrations. Insulin Resistance Atherosclerosis Study (IRAS) Investigators. *Arterioscler Thromb Vasc Biol* 17: 64-71, 1997.
144. Pan XR, Li GW, Hu YH, Wang JX, Yang WY, An ZX, Hu ZX, Lin J, Xiao JZ, Cao HB, Liu PA, Jiang XG, Jiang YY, Wang JP, Zheng H, Zhang H, Bennett PH, **Howard BV**. Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance: The Da Qing IGT and Diabetes Study. *Diabetes Care* 20: 537-544, 1997.
145. Paolisso G, Tataranni PA, Bogardus C, Ravussin E, **Howard BV**. Fasting plasma lipoprotein concentrations and the development of non-insulin-dependent diabetes mellitus. *Endocrinol Metab* 4: 173-178, 1997.
146. Weingand KW, Le NA, Kuzmak BR, Brown WV, Daggy BP, Miettinen TA, **Howard BV**, Howard WJ. Effects of psyllium on cholesterol and low-density lipoprotein metabolism in subjects with hypercholesterolemia. *Endocrinol Metab* 4: 141-150, 1997.
147. Yurgalevitch SM, Kriska AM, Welty TK, Go O, Robbins DC, **Howard BV**. Physical activity and lipids and lipoproteins in American Indians ages 45-74. *Med Sci Sports Exer* 30: 543-549, 1997.
148. Zephier E, Ballew C, Mokdad A, Mendlein J, Smith C, Yeh JL, Lee ET, Welty TK, **Howard BV**. Intake of nutrients related to cardiovascular disease among three groups of American Indians: The Strong Heart Dietary Study. *Prev Med* 26: 508-555, 1997.

149. Bella JN, Devereux RB, Roman MJ, O'Grady MJ, Welty TK, Lee ET, Fabsitz RR, **Howard BV**. Relations of left ventricular mass mass to fat-free and adipose body mass: The Strong Heart Study. *Circulation* 1998.
150. Devereux RB, Roman MJ, de Simone G, O'Grady MJ, Wood EA, Welty TK, Lee ET, Fabsitz RR, **Howard BV** for the Strong Heart Study Investigators. The weak relation between blood pressure and left ventricular mass is partially explained by additional effects of hemodynamic volume load and myocardial contractility: The Strong Heart Study. *Circulation* 1998 (in press).
151. Devereux RB, Roman MJ, O'Grady MJ, Fabsitz RR, Rhoades ER, Crawford A, **Howard BV**, Lee ET, Welty TK, for the Strong Heart Study Investigators. Differences in echocardiographic findings and systematic hemodynamics among non-diabetic American Indians in different regions: the Strong Heart Study. *Am J Epidemiol* 1998 (submitted)
152. Fagot-Campagna A, Nelson RG, Knowler WC, Pettitt DJ, Robbins DC, O Go, Welty TK, Lee ET, **Howard BV**. Plasma lipoproteins and the incidence of abnormal albumin excretion in diabetic American Indians: The Strong Heart Study. *Diabetologia* 1998;41:1002-1009.
153. Gray RS, Fabsitz RR, Cowan LD, Lee ET, **Howard, BV**, Savage PJ. Risk factor clustering in the insulin resistance syndrome: The Strong Heart Study. *Am J Epidemiol* 1998;148-869-78.
154. Gray RS, Fabsitz RR, Cowan LD, Lee ET, Welty TK, Jablonski KA, **Howard BV**. Relation of generalized and central obesity to cardiovascular risk factors and prevalent coronary heart disease in American Indians: The Strong Heart Study. *Diabetes* (submitted).
155. **Howard BV**, Cowan LD, Go O, Welty TK, Robbins DC, Lee ET for the Strong Heart Study Investigators. Adverse effects of diabetes on multiple cardiovascular disease risk factors in women: The Strong Heart Study. *Diabetes Care* 1998;21:1258-165.
156. **Howard BV**, Gidding S, Liu K. Associations of apolipoprotein E phenotype with plasma lipoproteins in African American and White young adults: The CARDIA Study. *Am J Epidemiol* 1998;148:859-68.
157. **Howard BV**, Lee ET, Cowan LD, Devereux RB, Gray RS, Go OT, Howard WJ, Rhoades D, Robbins DC, Welty TK. LDL cholesterol is a strong predictor of coronary heart disease in diabetic individuals with insulin resistance and low LDL. (submitted)
158. **Howard BV**, Mayer-Davis EJ, Goff D, Zaccaro DJ, Laws A, Robbins DC, Saad MF, Selby J, Hamman RF, Krauss RM, Haffner SM. Relationships between insulin resistance and lipoproteins in nondiabetic African Americans, Hispanics, and non-Hispanic Whites: The Insulin Resistance Atherosclerosis Study. *Metabolism* 1998;47:1174-1179.

159. Hu D, Gray RS, Jablonski KA, Welty TK, Lee ET, **Howard BV**. A study of glycemic control in diabetic American Indians: The Strong Heart. *J Henan Med Univ*, 1998;33:7-12.
160. Hu D, Jablonski KA, Lee ET, Welty TK, Howard BV. Glycemic control in diabetic American Indians; Longitudinal data from The Strong Heart Study. *Diabetes Care* 1998. (in press)
161. Ilercil A, Devereux RB, Roman MJ, Paranicas M, O'Grady MJ, Welty TK, Robbins DC, Fabsitz RR, **Howard BV**, Lee ET. Relation of impaired glucose tolerance to left ventricular structure and function: The Strong Heart Study. 1998 (submitted).
162. Lee ET, Cowan LD, Howard WJ, Sievers M, Welty TK, Wang W, Yeh JL, Rhoades ER, Devereux RB, Fabsitz RR, Go O, **Howard BV**. All-cause mortality and cardiovascular disease mortality in three American Indian populations, aged 45 - 74 years, 1984 - 1988: The Strong Heart Study. *Am J Epidemiol* 147:995-1008, 1998.
163. Paolisso G, **Howard BV**. Role of non-esterified fatty acids in the pathogenesis of type 2 diabetes mellitus. *Diabet Med* 15:360-366, 1998.
164. Schmitz MKH, Schreiner PJ, Jacobs DR, Leon AS, Liu K, **Howard BV**, Sternfeld B. Independent and interactive effects of apolipoprotein E phenotype and cardiorespiratory fitness on plasma lipids. 1998 (submitted).
165. Stoddart M, Jarvis B, Blake B, Fabsitz RR, Welty TK, Lee ET, **Howard BV**. Recruitment of American Indians in epidemiologic research. *Harvard J Minority Public Health* 1998 (in press).
166. Tracy RP, Yeh JL, Savage PJ, **Howard BV**. Albuminuria is strongly associated with plasma fibrinogen levels in American Indians: Results from the Strong Heart Study. 1998 (in press)
167. Paolisso G, Tagliamonte MR, Rizzo MR, Gualdiero P, Saccomanno F, Gambardella A, Giugliano D, D'Onofrio F, **Howard BV**. Lowering fatty acids potentiates acute insulin response in first degree relatives of people with Type II diabetes. *Diabetologia* 1998: 41:1127-1132.
168. Goldberg RB, Mellies MJ, Sacks FM, Moye LA, **Howard BV**, Howard WJ, Davis BR. Cardiovascular events and their reduction with pravastatin in diabetic and glucose-intolerant myocardial infarction survivors with average cholesterol levels. *Circulation* 1998;98:2513-2519.
169. Jones EC, Devereux RB, Roman MJ, Liu JE, Fishman D, Lee ET, Welty TK, Fabsitz RR, **Howard BV**. Prevalence and Correlates of Mitral Regurgitation in the General Population: The Strong Heart Study 1998 (Submitted).

170. Lee ET, **Howard BV**, Go O, Savage PJ, Fabsitz RR, Robbins DC, Welty TK. Prevalence of undiagnosed diabetes in three American Indian populations: A comparison of the 1997 American Diabetes Association diagnostic criteria and the 1985 World Health Organization diagnostic criteria —The Strong Heart Study. 1998 (submitted)
171. Bella JN, Devereux RB, Roman MJ, Palmieri V, Paranicas M, Welty TK, Lee ET, Fabsitz RR, **Howard BV**. Cardiac and systemic hemodynamic features of hypertension associated with diabetes – The Strong Heart Study. 1988 (submitted)
172. Festa A, D’Agostino R, Mykkanen L, Russell T, **Howard BV**, Haffner S. Low-density Lipoprotein particle size is inversely related to plasminogen activator inhibitor-1 levels: The Insulin Resistance Atherosclerosis Study. *Arterioscler Thromb Vasc Biol* 1999;19:605-610.
173. Haffner SM, D’Agostino R, Mykkanen L, Tracy R, **Howard BV**, Rewers M, Selby J, Savage PJ, Saad MF. Insulin sensitivity in subjects with type 2 diabetes – Relationship to cardiovascular risk factors: The Insulin Resistance Atherosclerosis Study. *Diabetes Care* 1999;22:562-568.
174. Fagot-Campagna A, Knowler WC, Narayan V, Hanson RH, Saaddine J, **Howard BV**. HDL cholesterol subfractions and risk of developing type 2 diabetes among Pima Indians. *Diabetes Care* 22:271-274,1999.
175. Fabsitz RR, Sidawy AN, Go O, Lee ET, Welty TK, Devereux RB, **Howard BV**. Prevalence of peripheral arterial disease and associated risk factors in American Indians: The Strong Heart Study. *Am J Epidemiol* 1999;149:330-338.
176. Sparling YH, Shankar S, Hannah JS, **Howard BV**. Nutrient Intakes in Relation to Egg Consumption in African Americans. 1999 (submitted)
177. Fabsitz RR, Sidawy AN, Robbins DC, Go O, Lee ET, Welty TK, Devereux RB, **Howard BV**. Medial arterial calcification in American Indians: The Strong Heart Study. *Arterioscler* 1999 (submitted)
178. Wang W, Lee ET, **Howard BV**, Fabsitz RR. Using HbA1c, FPG and a statistical model in identifying new type 2 diabetes mellitus – The Strong Heart Study. 1999 (submitted)
179. Collis T, Devereux RB, Roman MJ, Simone Gd, Yeh, J, **Howard BV**, Fabsitz RR, Welty TK. Relations of stroke volume and cardiac output to body composition: The Strong Heart Study. (in progress)
180. **Howard BV**, Lee ET, Cowan LD, Devereux RB, Galloway JM, Go O, Howard WJ, Rhoades ER, Robbins DC, Sievers ML, Welty TK. The rising tide of cardiovascular disease in American Indians: The Strong Heart Study. *Circulation* 1999;99:2389-2395.

181. North KE, MacCluer JW, Cowan LD, Howard BV. Fertility in post-menopausal American Indian women: The Strong Heart Study. (in progress)

Chapters, Editorials, Reviews, Books:

1. Cristofalo VJ, **Howard BV**, Kritchevsky D. Biochemistry of human cells in culture. In: *Research in Organic-Biological and Medicinal Chemistry*, Vol. 2, eds. Gallo U and Santamaria L (North Holland Co., Amsterdam, 1970), pp. 95-140.
2. Kritchevsky D, **Howard BV**. Lipid metabolism in human diploid cells. In: *Aging in Cell and Tissue Culture*, eds. Holeckova E and Cristofalo VJ (Plenum Press, New York, 1970), pp. 57-82.
3. Kritchevsky D, **Howard BV**, Cristofalo VJ. Biochemical studies on diploid cells. In: *Physical Activity and Aging*, Vol. 4, eds. Brunner D and Joke E (S. Karger Co., New York, 1970), pp. 110-120.
4. **Howard BV**, Butler JD, Butler JM. Lipid metabolism in normal and tumor cells in culture. In: *Tumor Lipids, Biochemistry and Metabolism*, ed. Woods R (Am. Oil Chem. Soc. Press, Champaign, Illinois, 1973), pp. 200-214.
5. **Howard BV**, Howard WJ. Lipid metabolism in cultured cells. *Adv Lipid Res* 12: 51-96, 1974.
6. **Howard BV**, Howard WJ. Lipids in normal and tumor cells in culture. *Prog Biochem Pharm* 10: 135-166, 1975.
7. Macarak EJ, **Howard BV**, Kefalides NA. Biosynthesis of collagen and metabolism of lipids by endothelial cells in culture. *Ann NY Acad Sci* 275: 104-113, 1976.
8. Kefalides NA, Macarak EJ, **Howard BV**, Kirby E. Metabolic properties of endothelial cells in culture. In: *Cellular and Biochemical Aspects in Diabetic Retinopathy*, ed. Regnault F and Duhault J (Elsevier, New York, 1978), pp. 3-13.
9. Macarak EJ, **Howard BV**, Kirby E, Kefalides NA. Biosynthesis of basement membrane collagen by cultured endothelial cells. In: *Colloquie International Biologie et Pathologie des Membranes Basales*, (Karger, Basel, 1979).

10. Bennion LJ, Mott DM, **Howard BV**. Mechanism of the lithogenic effects of oral contraceptives. In: *Bile Acids and Lipids*, eds. Paumgartner G, Stiehl A and Gerok W (MTP Press, Ltd., Munich, 1981), pp. 211-219.
11. Berman M, Grundy SM, **Howard BV**, eds. *Lipoprotein Kinetics and Modeling* (Academic Press, 1982).
12. **Howard BV**, Lisse JR, Knowler WC, Davis MP, Pettitt DJ, Bennett PH. Diabetes and atherosclerosis in Pima Indians. *Mount Sinai J Med* 49: 169-175, 1982.
13. **Howard BV**, Zech L, Reitman JS, Davis MP, Grundy SM. Studies of very low density lipoprotein triglyceride metabolism in the Pima Indians. In: *Lipoprotein Kinetics and Modeling*, eds. Berman M, Grundy SM and **Howard BV** (Academic Press, 1982), pp. 287-290.
14. Knowler WC, Savage PJ, Nagulesparan M, **Howard BV**, Pettitt DJ, Lisse JR, Aronoff SL, Bennett PH. Obesity, insulin resistance and diabetes mellitus in the Pima Indians. In: *The Genetics of Diabetes Mellitus*, eds. Kobberling J and Tattersall R (Academic Press, 1983), pp. 243-250.
15. **Howard BV**. Obesity cholelithiasis and lipoprotein metabolism in man. In: *Bile Acids and Atherosclerosis*, Vol. 15, ed. Grundy SM (Raven Press, New York, 1986), pp. 169-186.
16. Grundy SM, Bennett J, Bersot T, Chait A, Chisholm G, Fielding C, Harker LA, **Howard BV**, Iacona J, Kummerow FA, Sniderman A, Stamler J, Wissler R, Zilversmit D. The Relation of dietary lipids and coronary heart disease: Multiple mechanisms? *Arteriosclerosis* 1986 (submitted).
17. **Howard BV**. Lipoprotein metabolism in diabetes mellitus. *J Lipid Res* 28: 613-628, 1987.
18. Bogardus C, Lillioja S, **Howard BV**, Mott DM, Bennett PH. Cross-sectional and longitudinal studies of carbohydrate metabolism in Pima Indians. In: *Pathogenesis of Non-insulin Dependent Diabetes Mellitus*, ed. Grill W (New York, Raven Press, 1989), pp. 285-301.
19. Grundy SM, Brown WV, Dietschy JM, Ginsberg H, Goodnight S, **Howard BV**, LaRosa JC, McGill HC. Basis for dietary treatment. In: *State-of-the-Art Review, AHA Conference Report on Cholesterol*, ed. Gotto AM Jr. *Circulation* 80: 729-734, 1989.
20. **Howard BV**. Lipids and lipoprotein metabolism in diabetes mellitus. In: *Complications of Diabetes Mellitus*, Vol. 3, eds. Draznin B, Melmed S and LeRoith D (Alan R. Liss, Inc., New York, 1989), pp. 59-68.

21. **Howard BV**, Abbott WGH. Is there metabolic evidence for benefits of a high carbohydrate diet? In: *Diabetes, Nutrition and Metabolism*, Vol. 2, Suppl. 1, eds. Mancine M and Nestel PJ (Elsevier, New York, 1989), pp. 23-31.
22. Bogardus C, Lillioja S, Mott DM, **Howard BV**. Insulin resistance is a possible genetic marker for diabetes mellitus in Pima Indians. In: *Insulin and The Cell Membrane*, eds. **Howard BV**, Kahn CR and Klimes I (Gordon Breach & Co., New York, 1990), pp. 93-102.
23. **Howard BV**, Le NA, Lee ET, Fabsitz RR, Cowan LD, Oopik AJ, Savage PJ, Welty TK. Associations of lipoproteins with obesity in American Indians: The Strong Heart Study. In: *Progress in Obesity Research 1990*, Proceedings of the 6th International Congress on Obesity, eds. Oomura Y, Tarui S, and Shimazu T (John Libbey & Company, Ltd., 1990).
24. Klimes I, Kahn CR, **Howard BV**, eds. *Insulin and the Cell Membrane* (Gordon Breach & Co., New York, 1990).
25. **Howard BV**, Howard WJ. The compelling case for smoking cessation in diabetics. *Circulation* 82: 299-301, 1990.
26. Patti L, Swinburn B, Riccardi G, **Howard BV**. Composition and distribution of very-low-density lipoprotein subfractions in Pima Indians with non-insulin-dependent diabetes mellitus. *Tissue-Specific Metabolic Alterations in Diabetes* 10: 148-150, 1990.
27. **Howard BV**. Possible role of dietary fat in diabetes and kidney disease. In: *Food, Fats and Health*. Council for Agricultural Science and Technology Task Force Report No. 118 (CAST, Ames, IA, 1991), pp. 81-83.
28. **Howard BV**. Lipoproteins in non-insulin-dependent diabetes mellitus. In: *Medicine '91*. (1991), pp. 38-46.
29. **Howard BV**, Patti L. Diabetes mellitus and lipoprotein metabolism. *G Ital Diabetologia* 11: 101-116, 1991.
30. Robbins DC, **Howard BV**. Lipoprotein(a) and diabetes. Editorial. *Diabetes Care* 14: 347-349, 1991.
31. **Howard BV**. Lipoproteins: Structure and function. In: *Diabetes and Atherosclerosis*. eds. Draznin B and Eckel R (Elsevier, New York, 1992).
32. **Howard BV**. Obesity, lipoproteins and heart disease. *Proc Soc Exper Biol Med* 200: 202-205, 1992.

33. Hannah J, Kataoka S, Yamane K, Schectman G, Kaul S, **Howard BV**. Effect of dietary fatty acids on LDL binding. *Ann NY Acad Sci* 683: 178-182, 1993.
34. **Howard BV**. Insulin, insulin resistance and dyslipidemia. *Ann NY Acad Sci* 683: 1-8, 1993.
35. **Howard BV**, Schneiderman N, Falkner B, Haffner SM, Laws A. Insulin, health behaviors, and lipid metabolism. *Metabolism* 42 (Suppl 1): 25-35, 1993.
36. Klimes I, **Howard BV**, Storlein L, Sebokova E, eds. *Dietary Lipids and Insulin Action*, *Ann NY Acad Sci* Vol. 683 (1993).
37. Storlien LH, Klimes I, Sebokova E, **Howard BV**. Dietary recommendations: What we've learned here. *Ann NY Acad Sci* 683: 343-345, 1993.
38. Hannah JS, **Howard BV**. Dietary fats, insulin resistance and diabetes. *J Cardiovasc Risk* 1: 31-37, 1994.
39. **Howard BV**. Lipoprotein metabolism in diabetes. *Curr Opin Lipidol* 5: 216-220, 1994.
40. **Howard BV**, Howard WJ. Dyslipidemia in non-insulin dependent diabetes mellitus. *Endocr Rev* 15: 263-274, 1994.
41. **Howard BV**, Howard WJ. The pathophysiology and treatment of lipid disorders in diabetes mellitus. In: *Joslin's Diabetes Mellitus*, 13th Edition, eds, Kahn CR and Weir GC, (Lea and Febiger, Philadelphia, 1994), pp. 372-396.
42. **Howard BV**. Diet, insulin resistance, and atherosclerosis. *Proceedings of the 15th International Diabetes Federation Congress, Kobe, 6-11 November 1994*. Excerpta Medica International Congress Series 1100, Diabetes 1994, Eds. Baba and Kaneko. 446-450, 1995.
43. **Howard BV**. Dyslipidemia in insulin resistance: A well recognized but poorly understood key to atherogenesis. Editorial. *Endocrinol Metab* 2: 73-75, 1995.
44. **Howard BV**. Epidemiology of the pleurimetabolic syndrome. In: *Atherosclerosis X*, Eds. Woodford FP, Davignon J, and Sniderman A. (Elsevier, New York, 1995), pp. 516-519, International Congress Series 1066.
45. **Howard BV**. Insulin Action In Vivo: Insulin and lipoprotein metabolism. In: *International Textbook of Diabetes Mellitus*, 2nd Edition, eds., Alberti KGMM, Zimmet RA, DeFronzo RA, Keen H, (John Wiley & Sons, Ltd., West Sussex, UK, 1995), ch. 25.
46. **Howard BV**. Pathogenesis of diabetic dyslipidemia. *Diabetes Rev* 3: 423-432, 1995.

47. **Howard BV.** The insulin resistance syndrome: Dyslipidemia and coronary risk. *Psychosomatic Med* 57: 57-96, 1995
48. Packard CJ, **Howard BV.** Lipoprotein metabolism: More than the sum of its parts. Editorial. *Curr Opin Lipidol* 6: 115-116, 1995.
49. Ratner RE, **Howard BV**, Howard WJ. Lipid abnormalities in diabetes mellitus. In: *Principles and Practice of Endocrinology and Metabolism*, 2nd Edition, ed., Becker KL, (JB Lippincott Co., Philadelphia, 1995), pp. 1402-1409.
50. **Howard BV.** Hypertension in Hispanic Americans, American Indians, and Alaska Natives. Planning Committee of the CDM Group for the NHLBI Project on Hypertension in Selected Minority Populations. 1996 (in press).
51. **Howard BV.** Macrovascular complications of diabetes mellitus. In: *Diabetes Mellitus*, Eds. LeRoith D, Taylor SI and Olefsky, JM (Lippincott-Raven, Philadelphia, 1996), pp. 792-797.
52. **Howard BV**, Hall WD. Unresolved issues regarding hormone replacement therapy: The Women's Health Initiative and its relevance to practicing internists. Review article for the Women's Health Initiative. *Ann Intern Med* 1996 (submitted).
53. Krauss RM, Deckelbaum RJ, Ernst N, Fisher E, **Howard BV**, Knopp RH, Kotchen T, Lichtenstein AH, McGill HC, Pearson TA, Prewitt TE, Stone NJ, Horn LV, Weinberg R. Dietary guidelines for healthy American adults. A statement for health professionals from the Nutrition Committee, American Heart Association. *Circulation* 94: 1795-1800, 1996.
54. Packard CJ, **Howard BV.** From genes and molecules to the bedside. *Curr Opin Lipidol* 7: 113-116, 1996.
55. Robbins DC, Welty TK, Wang WY, Lee ET, **Howard BV.** Plasma lipids and lipoprotein concentrations among American Indians: Comparison with the US population. *Curr Opin Lipidol* 7: 188-195, 1996.
56. Robbins DC, Welty TK, Wang YWY, Lee ET, **Howard BV.** Plasma lipids and lipoprotein concentrations among American Indians: comparison with the US population. *Current Opinion in Lipidology* 7:188-195,1996.
57. **Howard BV.** Compositional changes in LDL in diabetes and their role in atherogenesis. In *Advances in Lipoprotein and Atherosclerosis Research, Diagnostics and Treatment, Proceedings of the 9th International Dresden Lipid Symposium 1997*, June 27-29, Stuttgart, Germany, 1997;49-53.
58. **Howard BV.** Dietary fatty acids, insulin resistance, and diabetes. *Ann NY Acad Sci* 827: 215-220, 1997.

59. **Howard BV**, Kritchevsky D. Phytochemicals and cardiovascular disease: A statement for healthcare professionals from the American Heart Association. *Circulation* 95: 2591-2593, 1997
60. **Howard BV**, Cowan LD, Haffner SM, Go O, Yeh JL, Robbins DC. Women, diabetes, lipoproteins, and the risk for coronary heart disease: Studies in four ethnic groups. In: *Hormonal, Metabolic, and Cellular Influences on Cardiovascular Disease in Women*, ed. Forte TM (American Heart Association Monograph Series, Futura Publishing Co., New York, 1997), pp. 261-272.
61. Klimes I, Haffner SM, Sebokova E, **Howard BV**, Storlien LH, eds. *Lipids and Syndromes of Insulin Resistance: From Molecular Biology to Clinical Medicine*. *Ann NY Acad Sci* Vol. 827, 1997.
62. **Howard BV**. Diabetes. In: *Surgeon General's Report on Dietary Fat and Health*. 1998 (in press).
63. **Howard BV**. Gender and ethnic differences in cholesterol-lowering response to dietary interventions. In: *Fifty Years of Nutrition Programs in Heart, Lung, and Blood Diseases*. (National Institutes of Health; National Heart, Lung, and Blood Institute; Bethesda, MD; 1998 (in press).
64. **Howard BV**. Lipoprotein (a) in diabetes. The dilemma continues. *Nutr Metab Cardiovasc Dis* 8:73-76, 1998.
65. **Howard BV**, Alberti KGMM. Diabetes mellitus: A survey manual. In: *Laboratory Methods in Field Surveys*. (World Health Organization, 1998 (in press).
66. **Howard BV**, Cowan LD, Haffner SM, Go O, Yeh JL, Robbins DC. Diabetes and risk for coronary heart disease in women. In *Women's Health: Prevention Is The Best Medicine*, Vol. 7, eds. Bray GA and Ryan DM, (Louisiana State University Press, Baton Rouge, LA, 1998 (in press).
67. Robbins DC, Howard JWm, **Howard BV**. Lipid abnormalities. In: *Clinical Medicine of Native Americans*, Eds. Galloway JM, Goldberg BW and Alpert JS. (The Center for Native American Health, Tuscon, AZ, 1998;21:141-150.
68. Kritchevsky D, **Howard BV**. Lipid theory of coronary heart disease. *Academic Press* (Encyclopedia of Human Nutrition, Sadler M, Strain JJ, Caballero B editors) 1998;451-457.
69. **Howard BV**. How do we evaluate and utilize data on ethnic differences? *Annals of Epidemiol* 1999 (in press)

70. **Howard BV**, Magee MF. Macrovascular complications of diabetes mellitus. In: *Diabetes Mellitus*, Eds. LeRoith D, Taylor SI and Olefsky, JM (Lippincott-Raven, Philadelphia, 1999) (in press)
71. **Howard BV**. Obesity and lipoprotein metabolism: relationship to cardiovascular disease. *Circulation* 1999
72. **Howard BV**. Insulin Resistance and Lipid Metabolism *Amer J Cardiol* 1999;84:28J-32J

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